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1911/12

The
University of Minnesota
Bulletin

West Central
School of Agriculture

MORRIS, MINNESOTA

1911-1912



West Central School of Agriculture
Morris, Minnesota.

Volume XIV

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The University catalogues are published by authority of the Board of Regents, as a regular series of bulletins. One bulletin for each college and one for the summer session is published every year and in addition a bulletin of general information outlining the entrance requirements of all colleges of the University, and embodying such items as University equipment, organizations and publications, expenses of students, loan and trust funds, scholarships, prizes, etc. Bulletins will be sent gratuitously, postage paid, to all persons who apply for them. In calling for bulletins, the college or school of the University concerning which information is desired should be stated. Address,

THE REGISTRAR,

The University of Minnesota,

Minneapolis, Minnesota.

The Board of Regents

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The HON. B. F. NELSON	PRES. GEORGE E. VINCENT

This bulletin announces the work of the West Central School of Agriculture and Experiment Station at Morris. The 1909 session of the Minnesota Legislature accepted from the National Government the gift of the property formerly used as an Indian School and appropriated funds for its maintenance as an agricultural school. The control of the institution was placed under the Board of Regents of the University of Minnesota. The first school year opened October third, nineteen hundred ten, with courses similar to those of the school at St. Anthony Park. It is desired to develop the work in such a way as to be most valuable to the farming interests of the region served.

The West Central Minnesota School of Agriculture and Experiment Farm

GEORGE EDGAR VINCENT, Ph.D., LL.D., President, University of Minnesota

ALBERT F. WOODS, M.A., Dean and Director, Department of Agriculture

FACULTY

EDGAR C. HIGBIE, Superintendent

G. R. INGALLS, Animal Husbandry and Rural Extension

P. E. MILLER, Agronomy and Station Work

S. I. SNORTUM, Accounts and Poultry

IRMA HATHORN, Preceptress and English

SUSAN WILDER, Home Economics

MARGARET JONES, Home Economics

ELIZABETH MOTT, English and Mathematics

E. A. RAYMOND, Blacksmithing and Farm Mechanics

O. O. BYE, Carpentry and Superintendent of Buildings

ERNEST MOLDENHAUER, Farm Foreman

MARY WHEATON, Library and Office

Mrs. G. L. SHARROT, Matron

School Calendar

1911-12

October	2	Monday	First term opens; Registration
October	3	Tuesday	Organization of classes
November	23	Thursday	Thanksgiving Day
December	21	Thursday	First term closes
January	2	Tuesday	Second term opens; Registration
January	3	Wednesday	Organization of classes
February	19	Monday	Opening of "Short Course"
February	22	Thursday	Washington's birthday
February	24	Saturday	Closing of "Short Course"
March	17	Sunday	Baccalaureate Address
March	19	Tuesday	Class Day
March	20	Wednesday	Commencement Day
March	25	Monday	Opening of "Prize Winners' Short Course"
March	30	Saturday	Closing of "Prize Winners' Short Course"
June	17	Monday	Opening of Teachers' Session
July	27	Saturday	Closing of Teachers' Session



MILITARY DRILL



FARM BLACKSMITHING



The West Central School of Agriculture

TIME OF OPENING

The School of Agriculture will open Monday, October 2, 1911, and close March 20, 1912. The fall term closes at 4:30 p.m., Friday, December 22, 1911, and the winter term begins Wednesday, January 3, 1912.

Instruction begins promptly at the opening of each term, and students should be present the first day and remain until the close of the term.

PURPOSE

The present purpose of the institution is to afford a chance for the young men and women of the farm to obtain further training for their chosen work. The courses are purposely practical. It is aimed to give the boys a knowledge of soils, farm plants and animals, and farm management, and the girls a training in sewing, cooking, and general home-making. Although practical courses predominate, work in the use of English is not slighted, and history and government are required.

LOCATION

The school is admirably situated to serve about seventeen counties of the west central part of the state. The Great Northern Railway through connections with the Chicago, Milwaukee, and St. Paul road gives good service to the southeast, south, southwest, west, and northwest. The Northern Pacific Railway through connections with the Soo and other lines gives very satisfactory service to the portion of the territory lying north and northeast of Morris.

The school itself adjoins the city of Morris and is situated upon a natural rise of ground overlooking the Pomme de Terre Valley. When the present plans are carried into effect, the campus will be a very beautiful place indeed with its dozen or fifteen buildings and pleasant drives.

DORMITORIES

The dormitories for the young men and women are separate. Each will be in charge of one of the members of the faculty. The rooms in the

dormitories are furnished with beds, mattresses, commodes, tables, etc., but each student must bring with him four sheets, one pair of blankets, one quilt, one bed spread, one pillow, three pillow cases, towels, napkins, comb and brushes.

HOME LIFE ON THE CAMPUS

The life of the students while attending the School of Agriculture is subject to supervision.

The home life of each student is carefully guarded, and everything is done to promote a healthful moral atmosphere.

The use of tobacco and spirituous liquors of all kinds is strictly forbidden. No person will be admitted as a student who is known to have the cigarette habit.

Anyone not in accord with these restrictions and not willing to lend a hand toward a strong moral growth, should not come to the School of Agriculture.

EXPENSES

The expenses at the institution are made as moderate as feasible. They include the following items:

Incidental fee (yearly).....	\$5.00
Board, light, heat, and flat laundry (weekly).....	3.50
Laboratory fees for woodwork, blacksmithing, sewing, cooking or chemistry per term.....	\$1.00 to 3.00
Text-book rental per term.....	1.00
Deposit (yearly).....	5.00
Hospital fee.....	1.00

Text-books may be purchased or rented as the student desires. The \$5.00 deposit is required as a protection against breakages, book losses, etc. Unless deductions are made, it will be returned in full at the end of the year. Each month's board is paid in advance. The buildings are lighted by electric lights and warmed by steam. No deduction in charge is made for any absence of less than five days.

A fee of \$1.00 per term is collected from each resident student and is used as a hospital fund. This fund will be administered under direction of the hospital committee which shall consist of the matron, the preceptress and preceptor, and four others elected from the student body. A general statement of regulations so far as such regulations can be determined, will be posted at the beginning of the year.

Students will buy their own stationery, drawing material, etc.

HOLIDAYS

Washington's birthday, February 22nd, will be observed by appropriate exercises.

On Thanksgiving Day no classes will be held, but school will continue as usual on Friday and Saturday following.

STUDENTS' DEBATING SOCIETIES

Students are urged to unite with one of the literary societies of the school for both pleasure and profit. They afford a training in conducting meetings, parliamentary law, and public speaking, obtainable in no other way.

LIBRARY

The library is well equipped to supply the needs of the students. A large number of books have been selected to meet the requirements of the various departments. These, with the government and station reports, are all classified and available for use by instructors and students.

The librarian is always ready to give whatever assistance she can
y need in the

The number of rooms is limited.
Send \$1.00 if you wish to make sure of
a reservation. This fee will be returned
when you enter school.

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ADMISSION

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The librarian is always ready to give whatever assistance she can in selecting students in the selection of the books they may need in the line of their work.

LECTURE COURSE

During the school year a lecture and entertainment course, consisting of four or five numbers, is given at a cost of one dollar for the students. These entertainments are strictly high grade and furnish a pleasant relaxation from regular school work.

SOCIAL, MORAL, AND RELIGIOUS LIFE

The social, moral, and religious life of the students will be carefully directed. Among the student organizations will be debating societies and Young Men's and Young Women's Christian Associations.

ADMISSION

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they will improve their courses through consolidation and association and ultimately make it possible for the School of Agriculture to set higher standards of admission, but, until such is the case, the School must accept any mature young man or woman even though he or she might find it hard to pass entrance tests. Students above sixteen years of age will be welcomed even though they may not be able to show graduation from the usual eighth grade work. Whenever possible, prospective students should present county or high school certificates in the common branches. These will admit to the regular work without conditions.

REQUIREMENTS FOR GRADUATION

First—The completion of the prescribed course of study, with an honorable standing in department.

Second—An essay of not less than one thousand words, upon a topic connected with agriculture or home economics, typewritten on paper of approved size for binding and filing in the library.

Third—For young men, a practical experience in field work at the University Farm or elsewhere, as shall appear in reports received from responsible sources.

It is essential that the student should do some work of a practical nature during the vacations following the first and second school years respectively. Students will be given a credit for this work just the same as for other school work. Blanks giving an outline of the work in detail and blanks for certification are furnished to all students.

It is expected that all the boys in the school will devote their vacations to actual farm work, or to some form of agricultural work, and the girls to some line or lines of work such as making bread for the family, canning fruits or vegetables, and other home-making pursuits.

EXPERIMENT STATION

Three hundred acres of land are laid out for experimental and demonstration purposes. At present three main lines are followed:

I. CROP ROTATION AND FARM MANAGEMENT—One hundred acres are divided into a five-year rotation with a dairy herd in connection. This is to demonstrate what seems to be the ideal for the newer agriculture, namely, smaller farms intensively handled with live stock to help maintain soil fertility.

II. BETTER SEED SELECTION—Pure seeds are being grown with a hope that the Station may lead in an effort toward the general improvement of the quality of farm seeds.

III. NITROGEN GATHERING CROPS—Clovers, alfalfas, and other leguminous crops are receiving attention in order to restore the nitrogen content of the soil, to improve the physical texture of the land, and to give a source of excellent stock food.

The Course of Study

The course of study offered covers a period of three years of six months each. The work is largely technical in character, but includes a wide range of subjects. The methods of instruction tend to educate students toward the farm instead of away from it, and to develop in them a love for the occupation by showing its possibilities.

FIRST (C) YEAR

FIRST TERM

Agricultural botany [4]		
Music [2]		
Farm mathematics [5]		
or		
*Drawing [2]		*Cooking [2]
*Blacksmithing [2]		Physical training [2]
*Carpentry [2]		*Sewing [2]
Military drill [3]		Social culture [1]
Agronomy [5]		Field agriculture [3]
Gymnasium [2]		*Home nursing [2]
†*Practicums [2]		

†See page 23.

SECOND TERM

Agricultural botany [4]		
English [5]		
Music [2]		
Comparative physiology [5]		
Study of breeds [5]		
or		
*Carpentry [2]		*Laundering [2]
*Drawing (farm buildings) [2]		*Sewing [2]
*Blacksmithing [2]		Physical training [2]
Military drill [3]		*Farm accounts [2]
Gymnasium [2]		
*Practicums [2]		

SECOND (B) YEAR

FIRST TERM

English [2]
Agricultural physics [5]

		Dairy chemistry [2] Fruit growing [3] Music [2] (optional)	
		*Dairy husbandry [2½]	{ Dairy lectures { Dairy practice { Dairy breeds
*Farm accounts [4] *Stock judging [2] Breeding [2] Military drill [3] Gymnasium [1]	} } } } }	or	{ *Farm accounts [2] { *Cooking [2] { Household art [1] { Physical training [2] { *Sewing [2]

SECOND TERM

		English [2] Agricultural chemistry [5] Music [2] optional Agricultural physics [5] Vegetable gardening [3]	
		*Dairy husbandry [2½]	{ Dairy stock lectures { Dairy practice { Dairy feeding
Farm management [5] *Dressing and curing meats [1] Military drill [2] Gymnasium [1]	} } } }	or	{ *Meats [1] { *Cooking [2] { Home management [1] { Physical training [2] { *Sewing [2]

THIRD (A) YEAR

FIRST TERM

		Agricultural chemistry [7] Forestry [3] Zoology [3] Poultry [3] ‡Algebra [5] Chorus [1] optional	
*Handling grain and machinery [1] *Veterinary science [2½] Gymnasium [1] Music or military drill [2]	} } } }	or	{ *Cooking [2] { *Sewing [2] { Music [2]

SECOND TERM

Civics [4]
 English [4]
 Plant propagation [3]
 Entomology and insect collection [3]
 ‡Algebra [5]
 Chorus [1] optional

*Grain judging [1]	}	or	{	Home economy [1]
*Stock judging [1]				*Cooking [2]
Feeding [3]				Domestic chemistry [3]
Soils and fertilizers [5]				*Sewing [3]
*Veterinary science [2½]				Domestic hygiene [1]
*Dairy stock judging [1]				

*Figures in brackets indicate the number of periods per week in which the subject is pursued. All work in subjects marked thus * extends through double time in the daily program.

‡Required of those expecting to enter the College of Agriculture.

Departmental Statements

AGRICULTURAL BOTANY

This course consists principally of a study of the flowering plants. The practical side of the subject is emphasized by the study of the plants usually found on the farm. Some work is done in the greenhouse, which enables the students to see more clearly the functions and different parts of the plant. This course includes a botanical study of weeds found on the farm, and the botanical features concerned in methods of eradication. Determination of weed seeds found in grain and grass mixtures is also a part of this course. Plant diseases, such as rusts, smuts, potato diseases, etc., are studied, and the best preventive methods are discussed. Some instruction is given in the use of the compound microscope.

AGRICULTURAL CHEMISTRY

In agricultural chemistry, one term is given to a study of the elements and compounds which are of the most importance in agriculture. This work is planned to prepare the student for intelligent study of the subject of the chemistry of foods, soils, and fertilizers, and at the same time to familiarize him with the more important chemical changes which take place in every-day life. Laboratory practice forms a prominent feature of the work. In the chemistry of foods, the composition of plant and animal bodies, the chemistry of plant growth, the chemistry of animal nutrition, the digestibility and value of foods, and the laws governing the economic uses of foods, are some of the subjects considered. The composition and the utilization of farm crops for food purposes, and the application of the principles of chemistry to plant and animal life, form the basis of this work.

AGRICULTURAL PHYSICS

In this department it is the aim to enlist the student's interest in a more keen appreciation of the principles that underlie the practices of his vocation. To this end, the facts with which he is already somewhat familiar are used to reach the fundamental law. For example, from his knowledge of the relation of weight to bulk in grains, soils, and water, he is led to a knowledge of volume, mass, density, weight, force, draft, specific gravity, and fluid pressure. So far as possible the work is carried on by experimental demonstrations before the class. Likewise, the somewhat vague and indefinite notions the young people have from their use of pulleys, eveners, and other farm machinery, form fitting stepping-stones to definite mathematical results, readily reached by them under proper guidance.

The varied questions of soil physics, soil formation, the movements of water and air through soil, soil temperatures, soil grains and granules, and pore space, are matters studied from the practical side and used as avenues to far-reaching laws.

AGRONOMY

A general consideration is given of soil formation; soil moisture and its control; the principles and effects of tillage and rotation of crops; farm crops, including history; uses, selection, storing, and testing of seeds; preparation of seed-bed and planting; cultivation; harvesting; meadows and pastures; methods in plant improvement; practice in judging grains and corn.

BLACKSMITHING

The students are instructed in the management of the forge and fire, and in bending, shaping, and welding iron and steel. They are required to make links, rings, hooks, bolts, clevises, tongs, cold-chisels, punches; in short, become familiar with all the operations necessary to enable them to do their own repair work when they return to the farm. Particular attention is given to rapid and accurate welding and to the shaping and tempering of steel tools. The forges used are such as any farmer can make for himself, and each student is taught to make his own tools, so that he will be able to furnish his shop with very little outlay.

BREEDING

Students receive instruction in the principles that govern breeding, on the influences that affect heredity, and in the care and management of breeding stock. Pedigree receives careful consideration, and each student is required to make out pedigrees of two or more pure-bred animals. They are also required to become familiar with methods of keeping live stock records of all kinds.

CARPENTRY

Instruction is given by means of lectures on the care and use of the common carpenter tools, such as should be found on every farm; also in methods of farm building construction—framing, laying out rafters, stairways, estimating building material, painting, etc. In the carpentry shop, students are required to make such exercises as will give them some practice in using carpenter tools. They are required to make mortise-joints, splices, drawing-boards, hammer-handles, eveners, cup-boards, etc.

Each student is required to file his own saws, sharpen his planes, chisels, etc.

AMERICAN GOVERNMENT

During the last term of the course, students receive instruction in this science and graduate with a good understanding of the origin, necessity, nature, and various forms of government, and of the machinery employed to carry on public works, establish justice, and provide for the common defense; of the organization and management of local institutions—the town, the village, the city, and the county; the manner in which states are created and affairs administered; the three departments—legislative, judicial, and executive—and the functions of each; the interdependence of the state and its citizens, as well as the powers and obligations of each, by due attention to which the state may be strengthened and the condition of its citizens ameliorated.

The relations of the state to the general government, the constitution and the power it confers, and the provisions for amendments, are taught. The more important principles of commercial law, including contracts, agency, partnership, corporations, and commercial paper, receive attention. Instruction is also given in the United States method of surveying public lands.

COMPARATIVE PHYSIOLOGY

During the first year, students take one term of applied physiology. This is an effort to connect technical physiology with the necessities of every-day life. The work includes a study of the general plan and structure of the body and the various individual tissues of which it is composed; also of the sources of heat and energy, digestion, and the relation of food materials to the various tissues of the body. Considerable attention is given to diseased and innutritious foods, food adulteration, and narcotics. The circulation is studied with special reference to the relation of the blood and lymph to tissue nutrition and tissue waste.

Accidents, including poisoning, are studied for the purpose of giving a practical knowledge of what to do in emergencies. Considerable attention is given to the subject of clothing, the various materials in use being considered with reference to fitness for special purposes. Some time is also given to the study of common physiology, of the organs of circulation, digestion, respiration, the nervous system, and the relations of bacteria to the common diseases, especially such diseases as consumption, typhoid fever, etc. A brief study is also given to the subject of digestion in the lower animals.

The class-work is illustrated by means of large charts, skeletons, manikins, and dissection. Important points of difference between human and animal physiology are pointed out, in preparation for the third year's work in the veterinary class. Matters of home and personal hygiene are interwoven with the physiology work.

COOKING

Cooking extends through five terms of the curriculum. The subjects covered in each term are as stated below:

First term, C year: Furniture and equipment needed in a home kitchen; best methods of managing kitchen work, caring for kitchen and dining room utensils, furniture, etc.; the place of measuring and weighing in cookery; the preparation and serving of vegetables, cereals, and bread.

First term, B year: Cooking is again taken up; the special topics being the preservation of fruits and vegetables by canning, preserving, pickling, and jelly-making. The selection, preparation, and serving of meats of all kinds is also considered. A sufficient amount of practical work is given in each case to illustrate the principles brought out. A special study of table service is begun during this term and extends through the year, a practice dinner being given by a portion of the class in the class dining-room each month.

Second term, B year: Eggs are considered as to selection, preservation, food value, different ways of cooking and serving. The preparation and serving of soups and beverages is considered, together with their food value. The subject of salads is considered in a similar way.

First term, A year: This is devoted to the marketing and care of food. The preparation and serving of dairy food, and made-over dishes and dishes for invalids, receive special attention.

Second term, A year: This is devoted to the preparation and serving of desserts, and to the study of food rations, dietaries, bills of fare, confections, etc. A free use is made of the U. S. Bulletins during the year, in the hope of arousing a greater interest in the food question and encouraging home reading along this line.

DAIRY CHEMISTRY

The chemical and allied changes which take place in the handling of milk and its manufacture into butter and cheese, and the application of these principles to the production of milk and its products, form the basis of this work.

DAIRY HUSBANDRY

Farm Dairy Lectures—A course of lectures is given in farm dairying, giving instruction in the care of milk and utensils, explaining the principles involved in creaming milk by the gravity and centrifugal processes, and giving full instruction in regard to running farm separators and the manufacture of butter and cheese in the farm dairy.

During the last half of the first term, students receive instruction in regard to the characteristics of the various breeds of dairy cattle, their origin and comparative adaptability for the dairy. Lectures are given upon the points desirable in animals intended for the dairy. The students have practice work in judging dairy stock.

During the second term, lectures are given covering both the scientific and practical phases underlying the principles of feeding. Practice work is given in compounding rations and estimating the comparative value of food stuffs.

Commencing the first Tuesday in February, lectures in bacteriology are given the girls in place of dairy feeding. This work treats in an elementary way the subjects of bacteria, yeasts, and molds in the home. It is the purpose of this course to familiarize the young women with the growth and character of fungi commonly met in household and dairy management. A microscopic examination and study of the more common forms of fungi is made and special stress is laid on the practical application of the subject to the home.

Dairy Practice—Students receive instruction in the most advanced methods of creaming milk, ripening cream, churning, working and packing butter, the manufacture of sweet curd cheese, and measuring the value of milk by the Babcock test and lactometer. This practice-work begins the third week of the first term and continues through the school year.

DOMESTIC CHEMISTRY

The composition of human foods and their combination to form balanced rations; dietary studies of families; cost and value of foods; chemical changes and losses in the cooking and preparation of foods; cereal food products; animal food products; fruits; adulterations of foods and their detection; fuels, soaps, disinfectants, dye stuffs and colors; the composition of common household utensils; the household water supply; preparation of home-made baking powders; baker's chemicals; the composition, food value, and characteristics of tea, coffee, chocolate, cocoa, molasses, honey, vinegar, spices, flavors, extracts, etc.; the grading and testing of wheat flour; the chemistry of bread making and household sanitation form the essential parts of this work.

Laboratory practice is given in study of the composition of foods and in detecting adulterations of different foods, such as milk, cream, butter, oleomargarine, lard, cheese, coffee, tea, vinegar, catsups, jellies, flavors and extracts, baking powders, cereal breakfast foods, and flour. The aim of this work is to give students an idea of the composition, uses, and value of food materials, and the part chemistry takes in sanitation and household affairs.

DOMESTIC HYGIENE

Several lectures will be given by a physician upon maidenhood, maternity, and infancy. These special lectures will be supplemented by the regular lectures, which consider the health of the family as dependent upon pure food, pure water, personal cleanliness, and proper habits, as well as upon heredity. The aim is to

impress the truth that a knowledge of, and obedience to, the laws of hygiene are essential to the preservation as well as to the restoration of health.

It includes instruction as to the nature and means for the prevention of infectious diseases, the care of the sick in the home, and the treatment of accidents and emergencies.

DRAWING

The student is taught the practical value of drawing for the purpose of designing and arranging buildings, machinery, etc. He makes drawings of the shop exercises and other simple objects in common use, thereby learning the application.

Designs are made for dwellings, barns, outbuildings, and machinery. As practical subjects for their designs, students are requested to bring from home data for plans of buildings needed on their farms. Estimates are made of the amount of material required and cost of construction.

DRESSING AND CURING MEATS

The instruction given the boys consists of demonstration lectures on the preparation of meat for farm use. They are required, in addition, to take two weeks' practice in dressing, cutting, and curing such meat as is likely to be used on the farm. Work is also given them in selecting and judging fat stock, and in judging dressed meats.

ENGLISH

Applicants for admission to the school, who are deficient in the knowledge of the inflections of the parts of speech, the classification of phrases and clauses and case constructions, are required to make up the deficiency by a course in grammar, for which no school credit will be given.

"C" Class. In the first year, English is studied five hours a week for one term. Three hours are given to constructive work with almost daily practice in writing short exercises based on Mayne's "Modern Business English." Two hours are given to the interpretation and analysis of literature.

"B" Class. In the second year, English is studied two hours a week for two terms. The writing of weekly themes and the study of the forms of discourse constitute the work.

"A" Class. In the second term of the third year a course in rhetoric is given covering four hours a week. The object of the training is fluency and correctness in written and oral English. The writing of the graduating thesis is a part of the course.

ENTOMOLOGY AND ZOOLOGY

The class receives instruction of a practical nature. The course is divided as follows:

Classification of insects; habits and life histories of injurious forms, with special attention to insect pests found in Minnesota. The nature of the different insecticides and methods of application, are discussed. The student spends some time in becoming acquainted with the appearance and habits of beneficial insects. Each student must collect fifty insects, representing at least twenty-five different kinds.

The four-footed pests of the farm—rabbits, gophers, squirrels, etc., as well as injurious and beneficial birds, are also studied.

FARM ACCOUNTS

The work in accounts is applied to the transactions which the student meets in the various duties of the farm and household. He is taught to keep his accounts, that he may know at any time the profit or loss in any department of his business, and is thus enabled to plan intelligently.

FARM MANAGEMENT

Systems of farming; selection of farms; rotation of crops and the planning of rotations suitable to the students' home farms and to farms operated under different systems; the cost of producing farm crops; marketing farm products; business methods applied to the farm, and a statement of the farm business are given.

An accurate plan of the home farm, showing fields with crops raised on each, and yields, and the location of farmstead and buildings, is required upon entering this course. Before leaving for home at the close of the first year, students should consult with the instructor on this subject, and obtain from him directions and blanks, so that the work required upon entering may be performed at home during the summer, where it may be easily and accurately completed.

FARM MATHEMATICS

Instruction in this subject consists of the application of its principles to all kinds of farm problems where measurements of material, extension, capacity, etc., are required. The student is prepared also to handle with ease the mathematics of the technical courses in the school.

Students deficient in arithmetic will be formed into a special class to prepare for Farm Mathematics.

FEEDING

The principles of feeding as applied to the growing of horses, beef cattle, sheep, and swine, are taught. Special attention is given to the choice and preparation of food for animals during different periods of growth, and during the time they are used for breeding purposes, and to summer feeding and pasturage. Practice is given in compounding rations that will include in the best manner the food-stuffs commonly produced on the farm. Practical lessons in feeding are given at the barns under the supervision of an experienced feeder. Each student thus learns the requirements of each class of stock.

FIELD AGRICULTURE

This work consists of a study of those portions of geology relating to soil formation; effect of the glaciers on the soils of Minnesota; origin of soils in the various agricultural regions of Minnesota; classification of soils; soil moisture and soil tillage land areas and the planning of fields and farms; the classes of field crops, as grains; grass, and cultivated crops; the relation of these crops to each other in a systematic rotation and in their relation to soil fertility; the origin, distribution, and uses of cereal crops and other field crops.

FORESTRY

Forestry includes the consideration of the formation and care of wind-breaks and shelter-belts; the laying out and planting of home grounds; discussion of the hardiness, habits, and value of our native and introduced trees, and the methods of propagating them.

FRUIT GROWING

Fruit-growing is taught with reference to raising fruit for market and in the home garden.

GRAIN AND CORN JUDGING

This course consists of a discussion of the use and value of the score-card; a study of the structure of each of the classes of seeds; a brief history and study of the characteristics in detail of each of the varieties considered; the adaptability of varieties to different localities; the conditions affecting yield; score-card practice and comparative judging, to impress upon the mind of each student the details to hold in mind in the selection of good seed grain.

HANDLING GRAINS AND MACHINERY

Practical suggestions are given for the best methods of harvesting, shocking, stacking, and storing cereal grains; adaptation of the various kinds of machinery with reference to the soil, weeds, and seasons; adjustment with special reference to durability, convenience in manipulation, etc.

HOME ECONOMY

The lectures in home economy are a study not only of the just proportion between expenditure and income, but of definite proportion in the expenditures made for existence, comfort, culture, and philanthropy. A study is made of the sources of income; especially of the income from the farm in the form of house, food, and luxuries; the purchase of necessities, such as household stores and furnishings is considered from the standpoint of the suitable; and desirability shown of saving something to be used in securing things which promote culture and comfort. The relation of cash and credit to cost is also considered. Attention is given to saving and forms of investment, a bank account, and the use of a check book. Students are required to submit an account setting forth in detail the use of a certain named income expended in the support of a family for one year, embracing not only every item of necessary home expense, but also an outlay made for travel, luxuries, accident, sickness, or other emergencies. The habit of keeping a household account is calculated to strengthen the judgment in the wise use of money.

HOME MANAGEMENT

This subject includes both housekeeping and home-making and the instruction is based on the belief that housekeeping is a business as important as it is difficult, and that home-making is the noblest form of human endeavor. The care of the house and household belongings, of the food, utensils, plumbing, etc., as well as the general ordering of family life, are considered in their relation to an adequate plan for home management. The end sought is to start the student in the right way of becoming mistress of the business of housekeeping and home-making. The practical benefit to be derived from the knowledge students gain in the cookery, sewing, dairy, laundry, and other classes, is emphasized and shown in its relation to an adequate plan for the daily program for the home.

HOME NURSING

A course of lectures will be given on the subjects of contagion and the care of contagious diseases; how to treat snake bites and other poisonous wounds; how to apply splints to all kinds of fractures, and how to stop the flow of blood in case of hemorrhage. Practical demonstrations will be given in the making of bandages and applying the tourniquet. A bed will be placed before the class and the students taught to make it up with the patient in it. Stretcher drill will be given. The common poisons and their antidotes will be taught, and what to do while awaiting the arrival of the doctor.

HOUSEHOLD ART

Lectures are given upon house and grounds, noting the distinctive character of the country home; the sanitary conditions involved in the selection of the site of the house, also the influence of the outlook; an elementary study of architecture in connection with planning a house which will provide "a place for everything" required in housekeeping operations and family life; instruction in the fundamental value of color, form, and design; training the taste and emphasizing the laws of hygiene that should influence the selection of materials and styles in the finishings and furnishings of the house.

LAUNDERING

The aim is to give the students a knowledge of the best means of cleansing all fabrics, with little injury to the cloth or color. Approved methods of cleansing by the use of chemicals, as in removing grease spots, stains, etc., are given.

LITERARY SOCIETY WORK

Any student belonging to a recognized literary society of the school, may receive credit in the course of study for the work done therein, by registering at the beginning of the term, and submitting to the teacher in English all essays to be read by such student before the literary society, and rehearsing to said instructor all essays, readings, or recitations, with a view to correct pronunciation, expression, etc.

MEATS

The instruction given to the girls in the subject of meats pertains to the selection and value of different classes of meat, and to the best methods of curing and preserving.

PLANT PROPAGATION

In this subject seed testing and the principles underlying the development of cultivated varieties of plants are taught; also the propagation of plants by seed, cuttings, grafting, and budding. The work of the class-room is illustrated by the orchards, nurseries, forest plantations, gardens, and greenhouses on the grounds of the Experiment Station, and by visits to commercial nurseries and greenhouses near by.

POULTRY

The instruction in this subject will include the following topics: History and characteristics of the leading breeds of poultry; breeding, rearing, and management



CARPENTRY



of fowls for eggs and for the market; planning, building, and arrangement of poultry-houses; managing incubators and brooders. A model poultry-house, containing pens of the most improved breeds, incubator-cellar, work-room, etc., has been provided, where experimental work and practical instruction are carried on.

PRACTICUMS

Instruction and practice are given in doing practical things about the fields and barns; fence-building; road-making; water supply; planning daily program on farm; land descriptions and measurements; soldering; pipe-fitting; rope-splicing; making rope halters; cement work; gasoline engines, etc.

SEWING

Instruction is given in the principles and use of healthful and appropriate clothing, and in the needlework of the home. The course provides for six terms' work. During the first term, instruction is given in the elements of sewing, including different stitches, seams, hems, and the various kinds of mending and the cutting and making of a cooking outfit; also practical talks on the use and care of the sewing-basket, touching the history of the various implements, and upon the textiles used—cotton, wool, linen, and silk.

In the second year, instruction is given in cutting and making plain garments, drafting underwear, shirt waists, and cotton dresses—taught by a simple method in which only a tape-line and square are used.

In the third year the more difficult work of dress making is taken up, including pattern-drafting, designing, cutting and fitting dresses. A practical aid to the work in this subject is offered by a museum of exhibits. These exhibits are kept in class-rooms, and include primitive and modern sewing implements, weaving processes, and the various cloth fibers.

Lectures are given on the utilitarian and art values of various textiles, and attention is paid to harmony in color.

SOCIAL CULTURE

A course of lectures is given on the usages of society, including manners, behavior, the voice, conversation, forms of address, invitations, etc. Suggestions are made in reference to reading, literary taste, and the choice of books. Special stress is given to the thought that the family life ought to be the highest expression of good society, and that next to the power of thinking correctly is the power of approaching others with ease, and of speaking with tactful directness.

SOILS AND FERTILIZERS

Some of the topics studied are: The formation of soils; adaptability of crops to different kinds of soils; chemical composition of soil; physical analysis of soils; interpretation of soil analysis, the judging, rating, and scaling of soils, alkali soils, acid soils; humus and its relations to soil fertility; the factors governing the increase and decrease of the nitrogen of the soil; farm manures—their composition and uses, and their action upon soils—green manures, commercial fertilizers, special-purpose fertilizers and their use; the influence of different methods of cultivation upon the fertility of the soil; the food requirements of farm crops; the rotation of crops as affecting the fertility of the soil; the income and outgo of fertility from farms where

different systems of farming are followed; the general principles of soil exhaustion and soil improvement, and the various factors which affect the fertility of soils. The class-room work is supplemented by laboratory practice.

STOCK JUDGING

Score-cards are used to an extent sufficient to familiarize students with that method of judging, and special efforts are made to do systematic and closely critical work in the selection of animals representative of the breeds and for breeding purposes. Living specimens are used, and rings made up for the student contests in stock judging. In connection with the work in dressing and curing meats, the judgment passed on live animals for the block is verified by score-cards, judgment of the dressed carcasses, and by actual block tests. These tests are made by the students, and bring out the percentage of meat in each commercial cut of the carcass. The quality of meat is passed upon in this connection by experts, and a careful report made to ascertain the type of animals best calculated for the production of the most meat of the best quality.

STUDY OF BREEDS

The market classes of horses, cattle, sheep, and swine are taken up briefly to bring out the form, quality and condition desirable and common to the different classes. This is followed in each class of stock, with the most common and valuable breeds for the state. These are studied carefully as regards their characteristics and origination, and as to their adaptability to the different Minnesota conditions. This work is illustrated with stock from herds and flocks maintained at University Farm for this purpose.

VEGETABLE GARDENING

Vegetable gardening embraces the study of garden tillage, irrigation, and rotation of crops; transplanting; formation and care of hotbeds; study of garden insects; and the growth of various vegetable crops.

VETERINARY SCIENCE

During the A year the student takes up a course of study in veterinary medicine, the purpose of which is to fit him for intelligent care of his farm stock. In this course the teaching is done by means of lectures and reviews and clinical work at the hospital maintained for this purpose. Lectures are illustrated by means of stereopticon charts, manikin of horse, skeleton of horse, and various other appliances.

The work covers the following subjects: Elementary anatomy; elementary pathology; cause and prevention of diseases; diagnosis and treatment of common diseases; examination for soundness; and a final short course on common medicines, studying their effect, uses, and doses. At the hospital clinics, students are enabled to examine and care for a variety of cases and to learn the elements of diagnosis for the more common diseases and forms of lameness.

Short Courses

The Farmers' Short Course

The week beginning February 19th will be devoted to short course work for any one desiring to spend a few days at the school. All departments will have special courses of interest for those who may be unable to spend more time at the institution. Actual practice in grain judging, blacksmithing, carpentry, feeding, sewing, cooking, and laundering will be given. The plan is to teach as many helpful things as possible during the week. The interest manifested last year warrants considerable extension of the course. The enrollment fee will be \$1.00. Board and a few rooms can be had upon the grounds. Send for special circular.

The Young Folks' Short Course

The week beginning March 25th will be given over to boys and girls winning short course prizes in the various counties. Anyone under eighteen, however, may enroll. As the regular school course will close the week before, there will be plenty of rooms to accommodate all who will come. A short course prize means that the entire expense of the student, including board, room, railroad fare, etc., will be paid for those who win in the contest. Ask your county superintendent or secretary of your Fair Association regarding this work. If you do not win a prize, you may attend by paying your own expenses, which will include your railroad fare, board, etc., probably not over \$3.00 for the entire week.

The Six Weeks' Teachers' Training Course

June 17 to July 27, 1912

A six weeks' summer training school for teachers will probably be conducted at the School of Agriculture. The usual summer school work will be offered, together with special courses in Agriculture, Home Economics, Woodwork, and Blacksmithing. Teachers may room and board at the institution at a moderate rate. There will be no charges for tuition.

Students

SECOND YEAR—5

Jongeward, Hubert F., Morris	Leuty, George M., Morris
Jongeward, William, Morris	Scott, Eugene W., Morris
Zahl, Henry F., Morris	

FIRST YEAR—98

Aanerud, Agnes, Donnelly	Hartog, Arthur D., Morris
Anderson, Clara, Cyrus	Hauck, Ruben W., Madison
Anderson, Harry M., Donnelly	Haug, Clemens M., Duluth
Anderson, Walter, Murdock	Hogan, Otto, Morris
Andert, Lena, Morris	Hogy, Anna, Cyrus
Andert, Paul W., Morris	Hogy, Edwin, Cyrus
Bjelland, Sam, Hoffman	Hoiseth, Alfred, Morris
Berg, Ella L., Chokio	Hoyer, Lewis, Morris
Brandt, Elmer T., Morris	Hoyer, Oscar, Morris
Brandt, Lawrence F., Donnelly	Isherwood, Earl, Morris
Brevig, Ole A., Starbuck	Johnson, Harry A., Hancock
Brevig, Joseph, Starbuck	Johnson, Paul, Donnelly
Brown, Russell, Chokio	Jongeward, John C., Morris
Cappelen, Olaus G., Morris	Kirkeboe, Albert, Murdock
Cappelen, Reider B., Morris	Kirwin, William, Morris
Carlson, Stella, Morris	Knudtson, Elmer, Mentor
Colman, Patrick T., Morris	Kleven, Gilbert, Starbuck
Dablow, Carl H., Morris	Klevjier, Harold, Morris
Dablow, Anice M., Morris	Koll, Victor, Morris
Diederick, Edward, Morris	Koecheritz, Alfred, Morris
Dunken, Otto, Chokio	Landers, Frank T., Artichoke Lake
Ernest, Lydia R., Morris	Laremore, Edward, Madison
Estensen, Alice, Hancock	Lewis, Martin, Morris
Everett, Erwin, Donnelly	Loeffler, Chas. H., Morris
Eystad, Chas. J., Alberta	Loeffler, Richard A., Morris
Farwell, Walter J., Alberta	Maanum, Clifford, Kensington
Forney, Paul E., Hornick, Ia.	M'Laughlin, Thomas O., Donnelly
Frick, Elizabeth, Morris	McNabb, Francis, Donnelly
Gausman, Amy R., Morris	Martinson, Arthur E., Elbow Lake
Gausman, Edward, Morris	Mecklenburg, Emil, Hancock
Gerber, Arthur, Donnelly	Miller, Albert, Morris
Gorder, Arnold, Starbuck	Munson, Alben, Donnelly
Gulbrandson, Hazel, Alberta	Nygaard, Petra, Starbuck
Guter, Joseph, Morris	Ogdahl, Arthur, Glenwood
Halloway, Fred, Halloway	Oldhaver, William, Chokio
Hanse, Melvin L., Morris	Olson, Ida, Morris

Opheim, Clifford, Cyrus
Page, Mamie, Hancock
Peterson, Agnes, Madison
Peterson, Ella, Starbuck
Powers, Walter, Morris
Raasch, Marth, Alberta
Ranum, Arthur, Starbuck
Rasmussen, Leo H., Clontarf
Rotto, Joseph, Farwell
Rounie, Lena, Starbuck
Runnie, Nels T., Morris
Sather, Edward, Donnelly
Schneider, Walter, Hancock

Seamans, Earl E., Thief River Falls
Shennum, John A., Canby
Smith, Frank, Morris
Snetting, Olaf, Cyrus
Solvie, Alma, Cyrus
Svenning, Olga, Glenwood
Thompson, Albert, Starbuck
Thompson, Alfred R., Cyrus
Thompson, Selma, Starbuck
Tinseth, Ella, Cyrus
Tinseth, Fred, Cyrus
Wille, Louise, Hancock
Wille, Martha, Morris



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